

Scullcap

Species (Family)

Scutellaria lateriflora L., *S. baicalensis* Georgi and other *Scutellaria* species (Labiatae)

S. baicalensis Georgi is a species commonly referred to as scullcap in Chinese herbal medicine.

Synonym(s)

Helmet Flower, Hoodwort, Quaker Bonnet, Scutellaria, *Scutellaria galericulata* L., Skullcap

Part(s) Used

Herb

Pharmacopoeial and Other Monographs

BHP 1996^(G9)

PDR for Herbal Medicines 2nd edition^(G36)

Legal Category (Licensed Products)

GSL^(G37)

Constituents^(G20,G22,G48,G60,G64)

Limited information has been documented regarding the constituents of *S. lateriflora*, although various related *Scutellaria* species have been investigated.

Flavonoids Apigenin, hispidulin, luteolin, scutellarin, scutellarin (bitter glycoside).

Iridoids Catalpol.

Volatile oils Limonene, terpineol (monoterpenes); *d*-cadinene, caryophyllene, *trans*- β -farnesene, β -humulene (sesquiterpenes).

Other constituents Lignin, resin and tannin.

Other *Scutellaria* species The related species *S. baicalensis* is reported to contain baicalein, baicalin, chrysin, oroxylin A, skullcapflavone II and wogonin.⁽¹⁻³⁾

S. galericulata is stated to contain apigenin, baicalein, baicalin, apigenin-7-glucoside and galeroside (baicalein- β -L-rhamnofuranoside).⁽⁴⁾

Food Use

Scullcap is not used in foods. In the USA, scullcap is listed by the Food and Drugs Administration (FDA) as a Herb of Undefined Safety.^(G22)

Herbal Use

Scullcap is stated to possess anticonvulsant and sedative properties.^(G34,G64) Traditionally, it has been used for epilepsy, chorea, hysteria, nervous tension states, and specifically for grand mal epilepsy.^(G7) In Chinese herbal medicine, the roots of *S. baicalensis* Georgi have been used traditionally as a remedy for inflammation, suppurative dermatitis, allergic diseases, hyperlipidaemia and atherosclerosis.

Dosage

Dried herb 1–2 g or by infusion three times daily.^(G7)

Liquid extract 2–4 mL (1:1 in 25% alcohol) three times daily.^(G7)

Tincture 1–2 mL (1:5 in 45% alcohol) three times daily.^(G7)

Pharmacological Actions

In vitro and animal studies

None documented for *Scutellaria lateriflora*.

Many investigations have been undertaken to study the pharmacological actions of *S. baicalensis* root. Documented actions have primarily been attributed to the various flavonoid constituents and include: *in vitro* inhibition of mast cell histamine release comparable to disodium cromoglycate for some flavonoids;⁽¹⁾ *in vitro* cytotoxicity of scullcap flavone II;⁽⁵⁾ *in vivo* and *in vitro* inhibition of lipid peroxidation;⁽⁶⁻⁸⁾ *in vitro* inhibition of lipoxygenase and cyclooxygenase pathways;⁽⁹⁾ hypocholesterolaemic activity in rats.⁽¹⁰⁾ This *in vivo* effect has been linked to *in vitro* actions documented for various flavonoids, including prevention of ethanol-induced hyperlipidaemia,⁽¹¹⁾ catecholamine-induced lipolysis^(10,11) and lipogenesis in adipose tissue;^(10,11) there is no pronounced effect on blood pressure in cats and rabbits.⁽¹²⁾ In addition, the latter study found no CNS-depressant and no antispasmodic activity. How-

ever, it did find marked antibacterial activity against various Gram-positive bacteria (e.g. *Bacillus subtilis*, *Escherichia coli*, *Sarcina lutea* and *Staphylococcus aureus*).⁽¹³⁾

Clinical studies

Clinical investigation of scutellarin involving 634 cases of cerebral thrombosis, cerebral embolism, and paralysis caused by stroke has been undertaken. An overall effective rate of more than 88% was reported following intramuscular, intravenous or oral administration.⁽¹⁴⁾

Side-effects, Toxicity^(G20)

Symptoms caused by overdosage of scullcap tincture include giddiness, stupor, confusion and seizures.^(G20) Hepatotoxic reactions have been reported after ingestion of scullcap-containing preparations.^(15,G20) Adulteration of scullcap herb by *Teucrium* is recognised. Several cases of hepatitis have been associated with germander (*Teucrium chamaedrys*).⁽¹⁶⁾

Contra-indications, Warnings

None documented. In view of the possible hepatotoxicity associated with scullcap, its use is best avoided.

Pregnancy and lactation Scullcap is stated to have been used traditionally to eliminate a mother's after-birth and to promote menstruation.^(G22) Limited information is known regarding the pharmacological activity and toxicity of scullcap. In view of this and concerns over hepatotoxicity, scullcap should not be taken during pregnancy and lactation.

Pharmaceutical Comment

Limited information has been documented regarding the chemistry of scullcap. Most of the pharmacological activities reported for other *Scutellaria* species have been attributed to the flavonoid constituents. Despite the traditional uses of scullcap as a sedative and anticonvulsant, there are no documented scientific data to support these uses. Commercial scullcap is commonly recognised to be adulterated with *Teucrium* species, notably *Teucrium canadense*. Herbal preparations stated to contain scullcap may therefore contain a *Teucrium* species. Few pharmacological studies have been undertaken for *Teucrium* species. Hepatitis has been associated with germander (*Teucrium chamaedrys*). Hepatotoxicity has resulted in humans taking commercially available remedies in the UK which are stated to contain

scullcap. It would seem advisable to avoid ingestion of scullcap.

References

See also General References G5, G9, G10, G18, G20, G22, G31, G32, G34, G36, G37, G48, G60 and G64.

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